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VOLUME IV, No. 2
SUMMER 1958

ILR Research

Published by the New York State School of Industrial and Labor Relations, Cornell University, Ithaca, New York

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Employment Trends and Prospects in Selected Manufacturing Industries in New York State

ALTHOUGH in general the economy of the nation has operated at a high level of production and employment since the end of World War II, not all industries and communities have been equally prosperous. For example, in the northeast region the plight of the textile industry and the communities in which such plants were located is well known. This situation represents a long-term trend which promises to continue.[1] Workers in the region in which marginal or submarginal textile plants are located may, therefore, anticipate some unemployment in the future.

In recent years, problems similar to those faced by the textile industry have also appeared in other industries and communities. Employment in the farm machinery industry, for example, has been declining; the location of new plants has shifted to the Middle West. This change has already seriously affected one New York State community, Auburn,[2] and may well bring a loss of jobs in other communities. Frequently, this type of industrial change catches the workers and the communities affected unprepared. In the absence of alternative job opportunities, there is usually unemployment and a loss of purchasing power which adversely affects trade and service industries and other aspects of the community. If situations of this type could be anticipated, certain steps might be taken by community groups and by workers to soften the impact of industrial change, and by means of industrial development and other programs provide new jobs opportunities. The first step in working out a program for dealing with the problems resulting from declining industries is to identify those industries that promise to contract and then to spot the plants that may be affected. A program of this type has been undertaken by the New York State Joint Legislative Committee on the State's Economy. The following analyses of employment trends in various industries emphasize mainly the developments in New York State.

The brief summaries of trends in selected manufacturing industries have been prepared, for the most part, by graduate students at the School of Industrial and Labor Relations in connection with a course in report writing. Most of the information is from published sources but in some instances data were obtained by personal contact with people in the industry and from unpublished tabulations prepared by the New York State Department of Labor, Division of Employment. A more comprehensive report on post-World War II changes in employment in New York State has been published as part of its annual report by the Joint Legislative Committee on the State's Economy.

[1]See the report to the governors of the New England states by Professor Seymour Harris, *New York Times*, March 17, 1957, Sec. 3, p. 1 F.

[2]See Leonard P. Adams and Robert L. Aronson, *Workers and Industrial Change* (Ithaca: New York State School of Industrial and Labor Relations, Cornell University, 1957), for an account of the shutdown of the International Harvester works in Auburn.

Employment Trends in the Biscuit, Crackers, and Pretzels Industry

by Robert Joseph McCarthy

The biscuit, crackers, and pretzels industry comprises establishments primarily engaged in manufacturing biscuit (except raised biscuit), crackers, sponge goods, dry sweet goods, machine-made cookies, pretzels, and similar "dry" bakery products, such as cracker meal, matzoth, sugar wafers, zwieback, and machine-made rusk.[1] This industry, along with Industry 2051 (Bread and Other Bakery Products, except Biscuit, Crackers, and Pretzels), comprises Industry Group 205, Bakery Products.[2]

Employment Decline

Table I shows that the biscuit, crackers, and pretzels industry in New York suffered a 35.3 percent loss in employment for the period 1947–1956.

Table I. **Number of Employees in Biscuit, Crackers, and Pretzels Industry in New York State.**

Year	*Employees*
1947	8,043
1950	7,800
1954	6,551
1956	5,561

Source: New York State Department of Labor, Division of Employment.

According to the Bureau of Census figures, the employment change was from 7,206 workers in 1947 to 6,794 in 1954.[3] The difference of approximately two hundred

[1]U. S. Department of Commerce, Bureau of the Census, *1954 Census of Manufactures*, Bulletin MC-20E, p. 20E-1.

[2]Many of the factories engaged in producing bakery products manufacture goods that are classified under both Industry Code 2052 and Industry Code 2051. This is one of the problems involved in studying Industry Group 205. Sometimes a relatively small shift in products being manufactured by an establishment will change its classification. This problem will be discussed in more detail later.

[3]*Ibid.*, p. 20E-7.

persons in the figures for 1954 might easily be dismissed by saying the agencies involved had classified a few establishments differently. The difference of over eight hundred employees in the figures for 1947, however, is harder to explain. It may have been caused by differences in classification or by an undercount by the Census or some combination of these.

Whatever the reasons for the differences, the Census data show that the biscuit, crackers, and pretzels industry has experienced a decline in employment at the national level. There was a slow but steady increase from 1947 until 1952, after which the trend turned the other way.

Table II. **Employment Figures in the Biscuit, Crackers, and Pretzels Industry in the United States, 1947–1954.**

Year	*Employees*
1947	46,058
1949	46,037
1950	47,257
1951	47,872
1952	49,271
1953	47,180
1954	44,763

Source: United States Department of Commerce, Bureau of the Census, *1954 Census of Manufactures*, Bulletin MC-20E, p. 20E-3.

Table II indicates that employment throughout the United States in this industry suffered a net loss of 2.8 percent in the period 1947–1954. The Census Bureau's figures for New York State indicate a 5.6 percent loss. Table III shows that only two of the seven major areas of production showed an increase in employment in the years 1947 through 1954. Of the five major areas that suffered the losses, New York State suffered the least.

Table III. **Employment in the Biscuit, Crackers, and Pretzels Industry in the Principal Areas of Employment.**

Principal Areas of Employment	*1954*	*1947*	*Net Change 1947–1954*	*% Change 1947–1954*
New York	6,794	7,206	− 412	− 5.6
Pennsylvania	4,710	5,487	− 777	−14
Illinois	7,251	4,663	+2,548	+55
Ohio	3,128	3,028	+ 100	+ 3
Michigan	1,658	2,055	− 397	−19
Missouri	1,127	2,711	−1,584	−56
California	2,626	2,879	− 253	− 9

Source: United States Department of Commerce, Bureau of the Census, *1954 Census of Manufactures*, Bulletin MC-20E, pp. 20E-7, 20E-8.

The tables and figures discussed previously have all shown a decrease in the number of employees in this industry. There was not, however, a corresponding decrease in production. Actually there was a considerable increase in production between 1947 and 1954 in the United States, as Table IV shows.

Although production figures for New York were not available it is likely that there was a substantial increase in production in the state. This should be true since production increased over 30 percent in the nation as a whole despite a 2.8 percent decrease in employment. While the decrease in employment in New York was greater than the national decrease, it was not enough greater to indicate that production would decline.

Table IV. **Total Shipments of the Biscuit, Crackers, and Pretzels Industry in the United States.**

	1954 (1,000 pounds baked weight)	*1947 (1,000 pounds baked weight)*
Cookies	1,389	1,027
Crackers	1,222	984
Pretzels	88	74

Source: United States Department of Commerce, Bureau of the Census, *1954 Census of Manufactures*, Bulletin MC-20E, p. 20E-15.

The production increase is especially noteworthy because the number of man-hours of production workers dropped considerably in the same period. The average hours worked per week dropped also, from 41.4 hours in 1951 to 39.7 in 1955.[4] The average number of hours worked each week appears to have slowly diminished but production was not adversely affected.

Table V. **Man-Hours of Production Workers in the Biscuit, Crackers, and Pretzels Industry in the United States.**

Year	*Man-Hours (in thousands)*
1947	78,197
1949	75,707
1950	76,097
1951	78,352
1952	78,348
1953	76,404
1954	68,509

Source: United States Department of Commerce, Bureau of the Census, *Annual Survey of Manufactures*, 1949–50, 1951, 1952, 1953, 1954.

Factors Explaining Trend

The National Biscuit Company is the largest employer in the industry in New York State, with over 4,000 employees in Industry 2052. The company has been reallocating production among its various plants for several years, and product lines have been shifted so that some of its plants are not now manufacturing the same products they did in 1947. The Buffalo plant, for example, which formerly manufactured crackers is now making dog biscuits. Crackers are now made elsewhere.[5] Dog biscuit production is not classified in Industry 2052 and, therefore, the employment statistics would show a drop in this industry even though everyone in this plant may actually be working.

The figures on production and man-hours suggest that mechanization has been introduced extensively in recent years. An official at the National Biscuit Company mentioned how much faster pretzels, for example, are now

[4]U. S. Department of Labor, *Employment and Earnings, Annual Supplement*, June 1956.

[5]Information obtained in personal interview.

being made. Production used to be largely a hand operation, but now it is completely automatic. Throughout National Biscuit Company plants and those of other firms in the industry, there has been a steady replacing of men by machines with a resultant decrease in number of employees needed.

Prospects for New York State

The evidence on employment trends in the biscuit, crackers, and pretzels industry indicates a downward trend, although it is not clear how severe this loss has been. Part of the decline has been attributable to a shift in the type of product produced in some plants. Another factor has been increased mechanization which will probably continue to be an influential factor. Since National Biscuit Company and Sunshine Biscuit Company are the largest employers in this industry in New York, the best way to predict the future would be to watch the operations of these two firms closely. National Biscuit, for example, is scheduled to open a large $20 million plant in New Jersey in January 1958. Whether this will have an effect on New York State operations remains to be seen.

Employment Trends in the Wool Carpet and Rug Industry

by Melvin Fountain

Employment in New York State in the wool carpet and rug industry has dropped from 16,613 in 1947 to 6,520 in 1956,[1] a loss of about 60 percent. According to the Census of Manufactures, the decline in employment in the wool carpet industry in the United States for 1947–1954 was 25 percent; the decline in production, as measured in thousands of square yards of wool carpets produced, was 28 percent.[2] Why then, in a period of general prosperity, has employment dropped by 60 percent in New York State? Will this decline continue in the future?

Of all the producing states, only the Southern regions showed a net gain in employment (41.2 percent) in the postwar period.[3] At the national level, sales (and therefore employment) for the entire carpet industry have been affected by the following:

Competition of Foreign Rugs: Due to reduced import duties and lower wage and raw material costs, foreign producers were able to increase their share of the market from .4 percent of sales in 1946 to 7.5 percent in 1956.[4]

Competition of Hard-Surface Floor Covering: There has been a tendency in recent years to substitute the less expensive hard-surface floor coverings for the more expensive carpets and rugs. Production of linoleum and cork carpeting increased from about 66,000,000 square yards in 1947 to almost 70,000,000 in 1954. In contrast, production of wool carpets dropped from 91,000,000 square yards in 1947 to 65,000,000 in 1954.[5]

Changes in Consumer Expenditure Patterns: Shipments of carpets as a percent of disposable income have shown a steady decline from a high of 0.23 percent in 1948 to a low of 0.17 percent in 1954. Since 1954, however, there has been a reversal of this trend, and in 1956 the ratio was up to 0.21 percent.[6]

Changes in Family Formation: Thirty percent of all carpet sales are made to newlyweds. The relatively small number of "depression babies" who are now at the marriageable age has tended to depress the demand for new carpets.[7]

Between 1947 and 1954 employment dropped by 11.8 percent in the carpet industry in the United States and by 25 percent in the wool segment of the industry.[8] The introduction of tufted, nonwool rugs has been a major factor in the relatively great decline in employment in the wool segment of the carpet industry. It is estimated that prior to 1947 practically no man-made fiber tufted rugs were produced while, in 1956, 37.5 percent of the estimated carpet production in the United States was accounted for by rayon or nylon rugs and carpeting.[9] The result has been a steady decrease in the number of workers engaged in the production of wool carpets and rugs.[10]

New York State has been hit particularly hard by the trend toward tufted, man-made fiber rugs because it has some of the largest and oldest woven wool carpet producing plants in the country. Since the tufting operations require very different facilities from those used in weaving, New York State producers have been faced with the problem either of remodeling their present antiquated facilities in order to compete more successfully for the business which remains in the woven wool market or of revamping their operations in favor of the newer tufting methods. In either case, carpet producers have preferred to build in the South because: (1) cheap unskilled labor is available in abundance; (2) unions, with their restrictive policies, do not have a strong foothold in this region; (3) southern communities encourage industrial development offering low taxes, free land, reduced transportation rates, etc.; (4) construction and heating costs are lower there; (5) they can be closer to their sources of carpet backing and laytex backsizing.[11] Such companies as Alexander Smith and Bigelow have, therefore, found it more profitable to abandon their New York mills in favor of southern operations. The shutdown of plants of these companies

[1]N. Y. S. Department of Labor, Division of Employment data.
[2]U. S. Department of Commerce, Bureau of the Census, *1954 Census of Manufactures*, Bulletin MC-22D.
[3]*Ibid.*
[4]Carpet Institute, Inc., *Basic Facts about the Carpet Industry*, 1956, p. 8.
[5]U. S. Department of Commerce, *Facts for Industry*.
[6]Carpet Institute, Inc., *op. cit.*, p. 17.
[7]*Ibid.*, 1955, p. 19.
[8]U. S. Department of Commerce, *Census of Manufactures*, 1954.
[9]*Ibid.*, and Carpet Institute, Inc., *op. cit.*, p. 11.
[10]U. S. Department of Commerce, *Census of Manufactures*, 1954.
[11]"Wool Moves South," *Textile World*, October 1956.

alone accounts for a decline of more than 4,200 workers in carpet production in New York State.[12]

Future Trends

Employment in the wool segment of the carpet industry in New York will depend upon (1) sales of all carpeting in general; (2) the sales ratio of man-made fiber tufted carpets to that of woven wool carpets; and (3) management decisions as to the desirability of moving south.

Although carpet sales are greatly affected by general business conditions and the level of consumer disposable income, there seems to be a good possibility that employment in the industry will pick up in the near future. Since 1955 consumers have been spending a greater proportion of their disposable incomes on rugs, and this may be indicative of new consumer expenditure patterns. Furthermore, the number of marriages is expected to pick up again in the late 1950's, and this should also have a bolstering effect. Finally, an expanded educational and advertising campaign by the Carpet Institute together with a prosperous home-construction market will presumably help somewhat to increase demand.

There is a difference of opinion as to whether tufting with man-made fibers will continue its spectacular rise or whether it will level off at about 50 percent of output. It is generally agreed, however, that this type of carpeting has not yet reached the height of its popularity.[13]

There is no reason to expect any sudden increase in employment in New York State due to increased demand for woven wool carpets, and there is little likelihood that new carpet producers will be attracted to the state since southern locations for new plants seem so advantageous. A general increase in carpet sales at the national level, however, would probably have a beneficial effect upon the wool segment of the industry in New York State, since the plants here would get a larger volume, though a smaller share, of an expanded market. Barring a substantial general increase in demand for all carpeting, New York manufacturers may be operating with relatively inefficient plants which produce a type of carpeting which is losing its appeal to customers. Since carpet manufacturers already located in New York prefer to move out of the state rather than rebuild their present mills, it is reasonable to expect still further cuts in employment unless and until the least efficient producers have been eliminated.

[12]*New York Times*, June 25, 1954, p. 1, col. 1; Feb. 1, 1955, p. 36, col. 4.

[13]"How Much Can It Grow," *Business Week*, June 16, 1956, p. 56.

Employment Trends in the Synthetic Fiber Industry

by John Sowada

According to available data there are three main reasons for the employment decrease in this New York State industry: (1) a change in the types of fiber manufactured and the consequent termination of certain production facilities; (2) changes in consumer preferences; and (3) a poor balance between imports and exports. The first reason, however, is the most important one.

In 1954 DuPont closed down its "Cordura" plant in Buffalo and in 1955 its staple-producing plant, also in Buffalo. The production of rayon staple was discontinued and the making of high tenacity rayon was transferred to the Richmond, Virginia, plant which specializes in high strength industrial yarns. The Buffalo plants employed 1,561.[1]

These shutdowns are part of a general trend toward the use of fibers such as "dacron" and "orlon." The increased sales of these fibers in 1956, however, did not fully offset the reduced shipments of rayon and acetate. This "growth of the newer synthetic fibers at the expense of the older types reflect[s] a general trend in the textile industry."[2]

DuPont and other companies have moved their synthetic textile plants to the South because of such advantages as (1) an ample supply of water, which is needed in the production of the fibers; (2) large quantities of spruce wood and cotton, basic ingredients in synthetic fiber production; (3) large available plant sites; (4) tax incentives; (5) a large labor supply; and (6) low transportation costs, due to the nearness of spinning and weaving mills. Expansion in southern areas is not only convenient but less costly than erecting new facilities in New York because the out-of-state plants are already equipped for making the new fibers.[3]

Postwar expansion of the manufacture of high tenacity yarns has been tremendous, the tire industry now being the largest single user of high tenacity rayon filaments. Production of regular- and intermediate-tenacity filament yarn, however, has decreased since 1951. Since 1950 a comparable drop has also occurred in acetate filament yarn.[4]

A negligible rise in per capita consumption of rayon and acetate fibers in the last decade has also had its effect on the industry. There has been an increase in the consumption of new man-made fibers, but this has not created a better market for fibers in general. Instead, the new fibers have encroached upon the markets of the older fibers.[5]

"Personal consumption expenditures for clothing and shoes approximated 10 percent of disposable personal income during the 1930's and most of the 1940's, a peak of 11.5 percent being reached in 1946. Subsequently, out-

[1]Letter from William H. Radebaugh, Public Relations Department, E. I. du Pont de Nemours and Company, Wilmington, Del., Dec. 9, 1957.

[2]E. I. du Pont de Nemours and Company, *Annual Report*, 1956, pp.6–7.

[3]E. B. Alderfer and H. E. Michl, *Economics of American Industry*, pp. 390, 398.

[4]*Ibid.*, p. 401.

[5]*Ibid.*

lays for clothing and shoes declined to an all-time low of 7.5 percent...in 1956...."[6]

The relationship of employment to value added is also significant. Between 1947 and 1954 the number of firms producing synthetic fibers increased from 38 to 46 and value added increased 65 percent, while employment dropped.[7] This indicates that the expansion is based on an increased use of capital rather than labor. The trend in synthetic broadwoven fabrics, however, is different. In the same time period, the number of firms decreased from 507 to 478, employment dropped 8 percent for all employees and 9 percent for production workers, and value added fell by 13 percent.[8] All this reflects new trends characterized by increased use in industry of synthetic fibers, but a declining demand for consumer goods. Unless personal consumption increases markedly and new industrial uses for fibers are found, these developments could have serious effects on the entire synthetic fibers industry.

"In foreign trade, subsequent postwar recovery made Japan the leading exporter of cotton and rayon goods after 1953, while the United States dropped to fourth place. Imports into our country, [however], have increased in recent years to around $1 billion annually...."[9]

The cumulative effect of these factors has been a loss of jobs in the synthetic fibers industry. New York and other eastern states in the northeast, however, have been the most severely affected because of the original location of the natural and synthetic fibers producing plants in this region.

[6]Standard and Poor, *Industry Surveys*, Looseleaf with current supplements, Vol. 2, p. T27.

[7]U. S. Department of Commerce, Bureau of the Census, *1954 Census of Manufactures*, Bulletin MC-28B, p. 7.

[8]*Ibid.*, Bulletin MC-22B, p. 5.

[9]Standard and Poor, p. T27.

Employment Trends in the Motor Vehicle Industry

by Paul H. Boorman

The New York State Motor Vehicle Industry[1] showed a decline in employment of approximately 33 percent between 1947 and 1956, according to data provided by the New York State Department of Labor. These figures show an employment decline from 8,338 in 1947 to 5,476 in 1956. The trend in this industry was, however, not typical of the trend in the Motor Vehicle and Equipment Industry group.[2] In this more inclusive grouping, employment in New York State increased from 35,766 to 41,165 during the same ten-year period.

The principal reason for the decline in employment in Industry 3711 is that a substantial number of plants had integrated their operations during, and prior to, this period. The integration of operations meant that the production of parts for bodies and the assembly of complete vehicles were done at the same location. This made it difficult for management to report accurately the numbers employed on the various products produced.

Recognizing the problems of reporting on a product basis, the Census of Manufactures in 1947 decided not to continue to report employment data for Industry 3711, but to report employment for the complete Motor Vehicle and Equipment Industry 371 only. The New York State Department of Labor, however, continued to report separate employment data for those firms which had not integrated their operations. The result was that, as the number of firms with "nonintegrated" operations declined, employment for this select group also declined. Actually, the number of people employed in plants which assemble and make parts for automobiles has increased in the postwar period.

Business Turnover

An interesting feature of New York State's automotive industry is the large number of small establishments. Over 85 percent of all establishments listed in successive editions of the New York State Industrial Directory since 1947 employed under five hundred workers; the vast majority of the establishments employed fewer than one hundred workers.[3] Furthermore, there was considerable turnover among these small firms. Although there were approximately the *same number* of establishments in each period,[4] the *same establishments* were not listed in each instance. More than one third of the establishments listed in the 1949 Directory failed to appear in Industry 371 in subsequent directories. Of the establishments listed in the 1953 Directory, approximately one quarter were "newcomers" since 1949 and approximately one quarter were not listed in the 1956 Directory. In the 1956 Directory approximately one quarter of the establishments in Industry 371 were listed for the first time.

It is true, however, that only a part of the turnover was due to the establishments going out of (or in) business. Some establishments were reclassified by the classifying agency, others left (or entered) the state, or changed their names. Reclassification on the basis of principal products made occurs regularly. Over 25 percent of the

[1]Standard Industrial Classification 3711 includes those establishments primarily engaged in manufacturing or assembling complete motor vehicles. Employment data are from the New York State Department of Labor, Division of Employment.

[2]The Motor Vehicle and Equipment Industry, Standard Industrial Classification 371, includes those establishments primarily engaged in manufacturing passenger-car bodies (3712), Truck and Bus Bodies (3713), Motor Vehicle Parts and Accessories (3714), Truck Trailers (3715), and Automobile Trailers (3716), as well as Motor Vehicles (3711).

[3]The Ford and General Motors plants located in New York State comprise most of the state's automotive employment. In addition, the Trico Products Corporation, the Twin Coach Company plant, and the New Process Gear Corporation each employ more than a thousand workers.

[4]The Directory listed 178 establishments in 1949, 160 in 1953, and 178 in 1956.

establishments in each period were reclassified; hence little, if any, disemployment resulted from this type of "turnover."

Employment Trends in the Optical Instruments and Lenses Industry

by Leonard P. Adams and Aziz Abidari

According to statistics of the New York State Department of Labor, employment in the optical instruments and lenses industry[1] in New York State has declined from 11,058 in 1947 to 7,769 in 1956, a drop of about 30 percent.[2] On the other hand, there has been a considerable expansion in the industry outside of New York State. How can these trends be explained? This report covers some of the information relevant to an understanding of past and prospective future trends in the industry.

First, let us look at some of the pertinent statistical data taken from the *1954 Census of Manufactures*. These data show that the industry, on a national basis, has been an expanding one since the end of World War II, in terms of whatever measure is used. Value added by manufacturing has increased more rapidly than number of employees or pay rolls. This could mean that capital has been substituted for labor, with a consequent increase in productivity, or that prices have advanced more rapidly than wages, or some combination of these two.

There is also the possibility that the Census data for 1947 were incomplete because of an undercount of small establishments. This point is suggested by a comparison of the Census data with those from the New York State Department of Labor, as will be shown below. If such was the case, the increases from 1947 to 1954 are probably overstated.

In New York State, at any rate, the Labor Department data show a substantial decline, whereas the Census shows the opposite. Which figures are correct? Tentatively, the evidence seems to support the state data rather than the Census. This evidence comes principally from the annual reports of the only large producer in this industry in the state—the Bausch & Lomb Optical Company of Rochester. This company reports that it had about 9,000 employees in 1947. Some of these were located in sales and distribution branches outside the state and therefore would, or should, not be classified as manufacturing employees, but the number of employees reported by Bausch & Lomb for the year 1947 suggests that the State Labor Department figure for average employment for the industry at 11,058 is probably nearer right than the Census figure of 6,342. In 1947 there were 33 other establishments in this industry in New York State and four of them had 100 or more employees.

By 1954, however, employment in the state according to the State Labor Department had declined to 8,536 and in the next two years to an average of 7,769 in 1956. The employment changes in the Bausch & Lomb Company alone seem to explain most of this change. Data reported by the company[3] were as follows:

1947 — 9,000	1953 — 6,946
1948 — 8,000	1955 — 6,700

The Labor Department data show a drop for the industry of 3,289 between 1947 and 1956. Assuming that most of the decline in employment at Bausch & Lomb occurred in New York State, this one situation would account for about two thirds of the loss. A review of the Bausch & Lomb annual reports suggests that this company has successfully reduced labor requirements while expanding production by introducing mass-production techniques and other devices which have effected substantial savings in labor costs.

It may be concluded, therefore, that employment trends for this industry in New York State suggest that the competitive position of at least the principal producer has been improved. Also the number of small plants has increased at the same time. These small plants probably are mainly concerned with servicing the retail trade in reading glasses. As the demand for this type of service increases, as it may with the increased numbers of older people, the number of small plants may increase, offering more jobs. But, at the same time, the big producers of optical goods such as Bausch & Lomb will undoubtedly continue to find ways and means of reducing labor costs and hence employment. Thus the employment outlook in general is for a greater number of jobs in the industry, even though large producers will probably introduce more labor-saving devices from time to time.

[1]Standard Industrial Classification Code No. 3831. This industry includes establishments engaged in grinding optical lenses and prisms, and in manufacturing microscopes, telescopes, field and opera glasses, and related optical instruments.

[2]The *1954 Census of Manufactures* data on unemployment do not agree with the New York State Department of Labor figures. According to the Census there was an increase (in employment) of about 20 percent between 1947 and 1954. On the basis of the information available it is not possible to reconcile these two sets of statistics, but the explanation may well be that the big difference between the two sources for the year 1947 reflects the lack of complete coverage by the Census for this year. It is certain that there has been a decline rather than an increase, because the annual reports of the biggest producer in the state, if not in the country, show a substantial decline. This point is covered more fully below.

[3]Company annual reports and the *Industrial Directory of New York State*. The figure 1953 probably applies to 1952.

When Young People Leave School:

A Study of the Experiences of High School Graduates and Dropouts in Utica, New York 1953-1957

by Leonard P. Adams

THE primary emphasis of this study was on the post-school experiences of two groups of young people who left high school in a period of economic change, 1953–1956. Information was collected from school records on all those who left school in this period, and by interviews with a 50 percent sample of those who left, in order to identify the characteristics of the individuals, the reasons why they left school, and to trace their subsequent experiences in and out of the job market. This type of inquiry, it was hoped, would be useful in providing a better understanding of the problems confronting young people when they enter the labor force, and indirectly help school counselors, parents, employment service staffs, and employers to do a more effective job of counseling and placement with these young people. It was not the purpose of the study to evaluate the school counseling program. To do this it would have been necessary to go into the type of counseling program conducted more fully than was done. Some of the findings, however, may be helpful to counselors.

This report summarizes some of the highlights of the findings. It deals also with two topics of general interest—the process of vocational choice and the characteristics of the young people who are potential dropouts.

To what extent do young people in this area fail to make use of their intellectual abilities by leaving school early or by not continuing their formal education beyond high school?

The answer, on the basis of the evidence from this study, is not entirely conclusive. If we assume that an I.Q. of 110 or over on the Otis Gamma test is evidence of intellectual ability to do advanced work, then 12.5 percent of the sample of 949 young people did not make the most of their native abilities. The proportion of graduates was 15 percent, whereas only 6 percent of the dropouts had scores of 110 and over. The potential loss to the individual and to society cannot be measured in mere numbers, of course, because the qualitative aspects of lost technical or professional manpower skills cannot be measured.

Why do young people leave high school before graduation? The principal explanations for the group as a whole, not alone for the very bright ones, were: adverse school experience, and need to work.

For the bright young people who did not finish a high school course, the principal explanations were the same as for the whole group of those who dropped out. Only a small proportion (15 percent) had been enrolled in a college preparatory course. Most of them had taken the "business" and "general" courses. The decision not to continue in school may well have reflected a choice of the kind of work they wished to do and the improved opportunities for jobs as new industries moved into the area.

All things considered, there does not appear to have been large numbers of young people able and willing to go on in school who did not do so. But there is no way of telling from the information available why some of those with ability did not at least try to make the best of it. Perhaps more attention by counselors to the brighter students, especially those who stayed in school until they were past the 10th and 11th grades would have been constructive. The problem, of course, is to detect those who are thinking about leaving before they act.

So far as the dropout group as a whole is concerned, the reasons why they left school can be further amplified by some of the findings. For one thing, if an individual had an I.Q. score of under 85, he or she was almost certain to become a dropout. Only 4 percent of graduates had such low scores, but 23 percent of the dropouts were in the below 85 category. Otherwise, there was no significant differences in I.Q. scores between dropouts and graduates. I.Q. score per se does not seem to distinguish.

Another distinguishing feature of the dropout group was that in 41 percent of their families the fathers were absent or disadvantaged economically by being disabled, unemployed, or retired. Also, the proportion of mothers who were working in such families was higher (53 percent) than in the families of graduates (40 percent). There was evidently a good deal of truth in the "work" explanation given by many of the dropouts. Some sort of government financial aid by way of loans to young people in such families might have helped them finish high school and go on from there. Also, there may well be sources of financial aid that could be used if these young people knew about them. The provision of assistance to such young people would be in keeping with American ideals of equality of opportunity, and would help the individual

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Leonard P. Adams is a professor in the ILR School. This article is based on a study made last summer with assistance from the U.S. Bureau of Labor Statistics and with the cooperation of the high school administrators in Utica. A more complete report is in process and when ready may be obtained by writing to the Distribution Center, ILR School, Cornell University.

to realize the highest potential achievement of which he or she is capable.

Why did those who graduated not go on with school? We do not have the answer to this question but nearly three quarters of the graduates who did not go on in school were women, most of whom had taken the "business" course. Their decision not to go on with further schooling was probably a reflection of expectation of marriage and for the good job opportunities available for secretaries and stenographers in the local job market.

Do those who drop out of school early have special problems in school or in the job market that could be overcome, in part at least, by better counseling?

Aside from the obvious, almost perennial problem of finding a sufficient number of job openings, the young people covered in the study, both dropouts and graduates, did not seem to have a lot of trouble. The generally poor business conditions prevailing in the period September 1953 to September 1954 made it harder for those leaving in this period to find work than for those who came later. But on the whole, 1953–1957 was a prosperous period for people in the area, with conditions in the last two years being close to "full employment."

The dropout group had more trouble than the graduates in finding work and also apparently in finding the type of work suitable to them. These young people were generally less mature and more dependent upon family and friends to provide assistance in finding work than the graduates. They seemed to have trouble in finding jobs and in keeping them. A high proportion claimed that they had had no vocational guidance. Also, very few said they were helped by their schools to find work. Perhaps something more might be done for these people before they leave school. If and when they do leave, there might be some way in which the schools and the public employment service could be more helpful by supplying them with knowledge concerning the local job market, the sources of job information, and like matters. Presumably the vocational guidance program of the schools did not reach these people because they left school too early in the school program. The same may also be true of the program of the public employment service, which concentrates more on those who reach the senior year. More job counseling at the 7th, 8th, and 9th grade levels would apparently have been helpful.

Perhaps counselors could have done more than they did to point out to young people the close relationship between early work experience while they were in school and the kinds of jobs they were likely to get after they entered the regular labor force. This assumes, of course, that counselors were aware of the close relationship between in-school and after-school jobs. Vacation work experiences for many proved to be a regular prework-training program. Undoubtedly the young people who do get jobs before finishing school learn a good deal about the world of work from direct experience. A good many of these young people, however, did not seem to realize the close connection between work during school years and later work experience. A realization of the significance of vacation or part-time jobs in view of probable future employment could make a difference in attitudes toward the value of early work experience and also in the importance of some of the courses offered in school.

In the short run, the dropouts seemed to be doing just as well as the graduates in terms of employment and earnings. In fact there were proportionately more dropouts than graduates in the higher weekly earnings brackets. Furthermore, the dropouts had more seniority and presumably would be laid off later than the graduates in case of a slump. What, then, is the economic value of a high school diploma? For some, the answer may not be a matter of cash but the type of work they can get as graduates. It may be too that graduates will rise further on the occupational scale in the long run than dropouts, although this is not a very certain prospect in the case of production jobs. Perhaps young people should realize that one of the chief values of a diploma is the opportunity it gives the graduate to go further with his education and training and thus qualify himself for the kinds of jobs for which few, if any, of the dropouts can compete.

There seems to be a high positive correlation between work experience before finishing school and I.Q. score. Nearly all of those with higher scores had worked, but the opposite was true of those at the other end of the I.Q. scale. Those with lower I.Q. scores apparently need special help not only in getting a job after they leave school but also in finding suitable vacation jobs while they are still in school. The result might be better adjustment to the world of work and less useless shopping around after they start to work.

What lessons can be drawn from the actual work experience of young people that would be useful to the schools, the public employment service, employers, and parents?

This question cannot be answered completely with the type of information collected in this study, but the findings do suggest that there are special counseling problems that need attention in connection with selected groups of young people. There is the group with relatively high I.Q. scores. Is enough attention given to trying to make the high school program attractive enough to hold these people? Perhaps some have personal problems that make them want to leave school. More needs to be known about this group.

At the other end of the I.Q. score scale is another special group. These people do not have the intelligence to take and enjoy much of the work in school, nor do they get much preparatory work experience during school years. They need special counseling, help in finding work, and careful placement. Otherwise they will have a good deal of unemployment and will go through a trial and error period of finding the right jobs for themselves, which may be expensive for them and for society, too.

So few of either the graduates or the dropouts continued with any kind of training or schooling after leaving high school that this situation raises some questions. Was there sufficient training on the job to satisfy the vocational ambitions of these young people? It seems doubtful if this was the answer in most cases because most of the beginning jobs in trade and service industries probably did not require much training. Do these young people realize the kind of school programs available in the area? It is difficult to believe that more people would not be interested in taking further work if the programs were suitable and if they were made familiar with them.

Although those with very low I.Q. scores who dropped out of school had an unusually difficult time of adjustment to work, it is clear that most of the graduates and the other dropouts experienced no great difficulties. The jobs they got were related to the jobs they had while in school and also fitted in with their vocational ambitions. This would seem to be a happy situation. In the case of the dropouts, however, one suspects that those who gave "adverse school conditions" or "adverse home situations" as reasons for leaving school were running away from something rather than toward an occupational goal. They, in effect, said they would take their chances on finding suitable work rather than continue to live with unhappy situations in school or at home. For this group there was very little conscious decision of what occupation to enter. They had to take what the market offered. The same might also be said of the graduates who entered the job market with no special skills, and with no planned program of education and training that would help them get beyond entry jobs in clerical, sales, and service occupations. This sort of situation makes it reasonably certain that young people will go into those occupations and industries where they are needed, but it probably often leads to disappointment and considerable job shopping by those who have no definite goals to start with when they enter the labor force.

The schools might be able to do a more effective job of counseling if they had more counselors and could give attention to some of the individuals who especially need help. One of the troublesome problems is to detect in advance those who need such special attention. How, for example, can the potential dropout be detected? Some of the findings of the present study suggest that it would be possible to predict who the dropouts will be. The findings of this and other studies suggest that the following types of persons are likely to leave school early:

1. Those with I.Q. scores under 85. For this predictive tool to be of most value it would be necessary to administer an intelligence test before young people reach the 9th grade, since many leave school at the earliest possible age, often just after completing the 8th grade.

2. Those who have repeated two or more semesters by the time they reach the 8th grade, and are two or more years older than other students in their classes. Dillon points out that those who eventually turn out to be dropouts often show signs of academic failure at the 3rd and 4th and 7th and 8th grade levels.

3. Those whose records at the 7th grade level indicate a lack of ability, interest, or application, or all of these.

4. Those who come from families in which the father is deceased or disabled, unemployed or retired.

5. Those who come from large families with four or more children.

6. Those who come from families in which the mother works.

Most of these characteristics by themselves are not conclusive, but taken together they make up the outlines of a potential dropout in the Utica schools and, judging by the results Dillon obtained, these characteristics may well be typical of potential dropouts in other areas.[1] It would be interesting to see if, in fact, these clues could be used successfully for predictive purposes. Such a project might well be one of interest to counselors and school administrators as well as researchers.

[1]See Harold J. Dillon, *Early School Leavers: A Major Educational Problem* (New York: National Child Labor Committee, 1949). Dillon's study covered young people in several small towns in Michigan and in four cities, Lansing, Mich., Cleveland and Cincinnati, Ohio, and Indianapolis, Ind. Many of his findings with respect to the characteristics of early school leavers, the reasons they give for leaving school early, and their work experiences after leaving school are similar to those of this study. Dillon, however, went beyond the Utica study in some respect. For one thing he queried teachers concerning their ability to pick out the potential early school leavers in advance. The conclusion was that teachers, so far as they were able to judge with the information available, found the potential early leaver not markedly different from the student body in general. Nevertheless, in his conclusions, Dillon does suggest certain symptoms of vulnerability to early school leaving which are similar on a number of points to those suggested by this study. The principal differences are that Dillon suggests that early school leaving is associated with a marked regression in attendance from elementary school to junior high and to senior high and that frequent transfers from one school to another likewise tend to precede early leaving.

The B.L.S. study of school leavers in Clarksburg, W. Va., shows that early school leavers there had about the same characteristics as those in Utica. For purposes of predicting who the early leavers will be this study also suggests that: (1) boys are more likely to leave early than girls; (2) failures in school have retarded most of the potential dropouts by 1 or 2 grades; (3) the I.Q. score (Otis) does not have predictive value except for those below 85.

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TRIAL AND LABOR RELATIONS, a unit of the State Univer
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LEONARD P. ADAMS, *Editor*
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